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* THIS MONTH:             *
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*  NEXT MEETING DATE: 05/03/89  *
* ----------------------------- *
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*                         *
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*   Editor                *
*   SMUG BYTES            *
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*                         *
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* Meeting on 2nd Sun. of the month *
* QL   - R. Hilsmann             *
*     - 251 5291                 *
* Meeting date see Spectrum group *
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his months instructions will also be
ew basic instructions to the TS2068
rogrammer. The only exception will be
'LASH.

1. DLINE - This command will allow
ou to delete lines of basic code.
   DLINE 10 will delete line 10.
   DLINE 1 TO 5 will delete lines 1
     through 5 inclusive.
   DLINE 5 TO will delete lines 5
     through the last line.
   DLINE TO 5 will delete the first
     line through line 5 inclusive.

2. FLASH - same as the TS2068 but
'LASH will not work in the 4 color
iode. Only the 8 color mode.

3. INSTR - this instruction will
:earch a string and return either the
iumber of the starting position in the
:tring or zero. If the number

returned is zero then the string was
not found. If a number is returned it
will point to the starting position in
the string were the search string can
be found.

4. KEYROW - this will show to see
what key was pressed by checking the
keyboard matrix. The keyboard matrix
is in the QL manual under KEYROW
(p.30). There are a few mistakes in
the manual. They are:
KEYROW 7, 128 - this is a comma.
KEYROW 6, 32 - this is a zero.
KEYROW 5, 128 - this is an "I".
KEYROW 3, 1 - this is a "(".
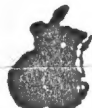KEYROW 3, 128 - this is a semi-colon.
KEYROW 2, 1 - this is a ")".
KEYROW 2, 128 - this is apostrophe.
The KEYROW instruction is used as
follows:
   IF KEYROW(5)=4 THEN PRINT "Ii"

"SQ" NOTES
BY R.A.HILSMANN

Ever been frustrated with the type of terminal programs available for your computers? Well some years ago, the only terminal programs available for the 2068 were MTERM & MTERM II, the slow key response of either program got to me, so I sat down and wrote my own. Perhaps some of you still remember the printout which I brought to one of the meetings.

At that time I was looking for a solution to the slow screen action on the 2068 while running the 2050 modem at 1200 baud. I was loosing one or two characters at the beginning of each line after the initial screen had filled, and the scroll routine in ROM was activated. I solved the problem a few days later by telling the TNC (Terminal Node Controller) to send a few nulls after each linefeed, this took care of the problem.

The program I wrote, which you can see in the next columns, was originally written for use with PACKET RADIO, a form of digital communication developed by Amateur Radio Operators, where instead digital signals are send via Radio rather than via the telephone lines. This should tell you that this program will work with an RS 232 board which I installed into the 2050 modem, but I have never checked this program with the phone modem in the 2050.

In the next column is a listing of the 275 bytes of code for the main module, nothing fancy, but fast. There are some features incorporated in the code, an audible tone when a control "G" is received, and the chance to open a capture buffer, 32K in length, from basic, which you may reset and clear while in terminal mode. All this could be enhanced with the support of a basic program. You will find a few lines of basic I wrote to give you some idea. Make any additions or changes to your liking or needs.

LOC	BYTES	NAME	MNEMONIC	;EXPLANATION
EE00	00	BAUD	NOP	;BAUDRATE, 4E=1200
EE01	00	BOPN	NOP	;FF=BUFFER OPEN, 00 CLOSED
EE02	00	BFER	NOP	;START OF BUFFER CONSTANT
EE03	00		NOP	;AT 6DF6H = 28150 DEC
EE04	00	PBFR	NOP	;BUFFER POINTER (WRITE)
EE05	00		NOP	;
EE06	00	LBFR	NOP	;REMAINING SPACE IN BUFFER
EE07	00		NOP	;
EE08	21F66D	INIT	LD HL,6DF6	;LOAD HL - START BUFFER
EE0B	2202EE		LD (BFER),HL	;LOAD EE02 HL
EE0E	2204EE		LD (PBFR),HL	;LOAD EE04 HL
EE11	210080		LD HL,8000	;LOAD HL, LENGTH BUFFER
EE14	2206EE		LD (LBFR),HL	;LOAD EE06 HL
EE17	AF	UART	XOR A	;CLEAR A
EE18	D377		OUT (77),A	;OUTPUT 0 THREE TIMES TO
EE1A	D377		OUT (77),A	;ENSURE THAT USART IS
EE1C	D377		OUT (77),A	;IN A KNOWN STATE.
EE1E	3E40		LD A,40	;RESET USART=40H - 64DEC
EE20	D377		OUT (77),A	;OUTPUT TO COMMAND CHANNEL
EE22	3A00EE		LD A,(BAUD)	;SET BAUDRATE
EE25	D377		OUT (77),A	;OUTPUT TO COMMAND CHANNEL
EE27	3E37		LD A,37	;ENABLE INPUT & OUTPUT
EE29	D377		OUT (77),A	;OUTPUT TO COMMAND CHANNEL
EE2B	010080	CLBF	LD BC,8000	;SET BC TO CLEAR BUFFER
EE2E	21F46D		LD HL,6DF4	;SET HL TWO AHEAD OF BUFFER
EE31	ED5B02EE		LD DE,(BFER)	;SET DE TO START OF BUFFER
EE35	ED80		LDIR	;CLEAR BUFFER
EE37	C9		RET	;RETURN
EE38	AF		XOR A	;CLEAR REGISTER A
EE39	3A085C	RLOP	LD A,(LASK)	;LOAD A, LAST KEY PRESSED
EE3C	FE00		CP 00	;COMPARE WITH 00
EE3E	C2C0EE		JP NZ,STTX	;JUMP TO STTX IF > 00
EE41	DB77		IN A,(77)	;GET USART STATUS
EE43	CB4F		BIT 1,A	;CHECK IF USART HAS CHR$
EE45	28F2		JR Z,RLOP	;IF NO CHR$, START OVER
EE47	DB73		IN A,(73)	;GET CHR$ FROM USART
EE49	FE08		CP 08	;IS IT A DELETE CHR$?
EE4B	CA98EE		JP Z,DELE	;IF YES, JUMP TO DELETE ROUT.
EE4E	FE0D		CP 0D	;IS IT A (CR)?
EE50	280D		JR Z,BFST	;IF YES, JUMP FORWARD
EE52	FE07		CP 07	;IS IT A CTRL "G"?
EE54	CCB9EE		CALL Z,BELL	;IF YES, GOTO BELL ROUTINE
EE57	FE80		CP 80	;IS THE CHR$ > THAN 80H
EE59	30DE		JR NC,RLOP	;IF NOT PRINTABLE GOTO START
EE5B	FE20		CP 20	;IS THE CHR$ < THAN 20H
EE5D	38DA		JR C,RLOP	;IF YES GOTO START
EE5F	F5	BFST	PUSH AF	;SAVE THE CHR$
EE60	3A01EE		LD A,(BOPN)	;LOAD A EE01
EE63	FE00		CP 00	;CHECK IF BUFFER IS OPEN
EE65	2827		JR Z,OUCH	;IF NOT, GOTO PRINT ROUTINE
EE67	F1	PRBF	POP AF	;GET CHR$
EE68	CD7EEE		CALL PNT1	;GO SET HL & BC FOR BUFFER
EE6B	77		LD (HL),A	;LOAD CHR$ INTO BUFFER

```
EE6C EDA1        CPI         ;UPDATE HL & BC
EE6E CD86EE      CALL PNT2   ;GO SAVE HL & BC
EE71 F5          PUSH AF     ;SAVE CHR$ AGAIN
EE72 EA8EEE      JP PE,OUCH  ;IF BUFFER NOT FILLED GOTO OUCH
EE75 AF          XOR A       ;CLEAR A REGISTER
EE76 3201EE      LD (BOPN),A ;CLOSE BUFFER
EE79 CDB9EE      CALL BELL   ;RING BELL TO INDICATE
EE7C 1810        JR OUCH     ;NOW GO AND PRINT CHR$
EE7E 2A04EE PNT1 LD HL,(PBFR);LOAD HL CONTENTS EE04
EE81 ED4B06EE    LD BC,(LBFR);LOAD BC CONTENTS EE06
EE85 C9      !   RET         ;RETURN
EE86 ED4306EEPNT2 LD (LBFR),BC;LOAD EE06 BC
EEBA 2204EE  !   LD (PBFR),HL;LOAD EE04 HL
EE8D C9          RET         ;RETURN
EE8E F1     OUCH POP AF      ;GET CHR$ AGAIN
EE8F D7          RST 10H     ;PRINT CHR$ TO SCREEN
EE90 3EFF        LD A,FFH    ;LOAD REG. A WITH 255
EE92 328C5C      LD (SCCT),A ;SET SCROLL COUNT CONTINUOUS
EE95 AF          XOR A       ;CLEAR A REGISTER
EE96 18A1    RET" JR RLOP    ;DONE, GOTO START
EE98 2A845C DELE LD HL,(DFCC);LOAD HL ADDRESS DISPLAY FILE
EE9B 2B          DEC HL      ;GO BACK ONE SPACE
EE9C 22845C      LD (DFCC),HL;SET DISPLAY BACK ONE SPACE
EE9F E5          PUSH HL     ;SAVE POINTER
EEA0 3E20        LD A,20H    ;LOAD REG A WITH SPACE CHR$
EEA2 D7          RST 10H     ;PRINT SPACE, ERASE OLD CHR$
EEA3 E1          POP HL      ;GET POINTER BACK IN HL
EEA4 22845C      LD (DFCC),HL;SET DISPLAY FILE POINTER
EEA7 3A01EE      LD A,(BOPN) ;LOAD REG A, EE01
EEAA FE00        CP 00       ;CHECK IF BUFFER OPEN
EEAC 288B        JR Z,RLOP   ;FINISHED IF NOT
EEAE CD7EEE      CALL PNT1   ;IF OPEN, SET HL & BC
EEB1 2B          DEC HL      ;SET BUFFER POINTER BACK ONE
EEB2 03          INC BC      ;INCREMENT BUFFER LENGTH
EEB3 CD86EE      CALL PNT2   ;RESAVE EE04 & EE06
EEB6 AF          XOR A       ;CLEAR A REGISTER
EEB7 18DD        JR RET"     ;RETURN RLOP, TWO HOPS
EEB9 F5     BELL PUSH AF     ;SAVE CHR$
EEBA 11FF00      LD DE,00FF  ;SET LENGTH OF TONE
EEBD 21FF00      LD HL,00FF  ;SET PITCH OF TONE
EEC0 CDB503      CALL 03B5   ;CALL ROM BEEP (SINCLAIR)
EEC3 F1          POP AF      ;GET CHR$ BACK
EEC4 C9          RET         ;DONE, RETURN
;THIS ROUTINE CHECKS FOR CHR$ NORMALLY NOT PASSED
;SINCE THEY ARE GREATER THAN 80H OR SMALER THAN 20H.
EEC5 FE80   STTX CP 80       ;UNPRINTABLE CHR$ ? (TOKEN)
EEC7 3038        JR NC,RET:  ;RETURN BUT CLEAR KEY FIRST
EEC9 FE0E        CP 0E       ;CS/SS PRESSED ? (CTRL KEY)
EECB 280E        JR Z,CONV   ;GOTO CONVERT ROUTINE
EECD FE0D        CP 0D       ;IS IT THE ENTER KEY ?
EECF 2826        JR Z,OUTX   ;GOTO TRANSMITT ROUTINE
EED1 FE0C        CP 0C       ;DELETE KEY PRESSED ?
EED3 2822        JR Z,OUTX   ;GOTO TRANSMITT ROUTINE
EED5 FE20        CP 20       ;IS IT A SPACE ?
EED7 281E        JR Z,OUTX   ;AGAIN SEND CHR$
EED9 1818        JR TXCH     ;GOTO TX ROUT. BUT
```

```
EEDB 3A085C CONV LD A,(lask) ;GET 2ND KEY PRESS AFTER CS/SS
EEDE FE0E        CP 0E       ;BUT WAIT FOR 2ND KEY PRESS
EEE0 28F9        JR Z,CONV   ;LOOP TO WAIT
EEE2 D640        SUB 40H     ;SUBTRACT 40H FROM CHR$
EEE4 FE20        CP 20       ;WAS IT A CAPITAL CHR$ ?
EEE6 D40CEF      CALL NC,AGAIN;IF NOT, GO DEDUCT ANOTHER 20H
EEE9 FE01        CP 01       ;IS IT THE CHR$ "A" ?
EEEB C8          RET Z       ;IF YES, RETURN TO BASIC
EEEC FE02        CP 02       ;IS IT CHR$ "B" ?
EEEE CC2BEE      CALL Z,CLBF :IF YES, RESET & CLEAR BUFFER
EEF1 FE05        CP 05       ;IS IT CHR$ "E" ?
EEF3 CC18EF      CALL Z,OPEN :IF YES, GOTO TOGLE THE BFFR.
EEF6 FE02        CP 02       ;CHECK FOR CHR$ <03H
EEF8 3006        JR NC,OUTX  ;IF NOT, SEND THEM
EEFA 180E        JR RET:     ;IF YES, RETURN
EEFC FE20   TXCH CP 20       ;REJECT CHR$ < THAN 20H
EEFE 380A        JR C,RET:   ;RETURN, BUT CLEAR LAST KEY
EF00 F5     OUTX PUSH AF     ;SAVE CHR$ TO BE SEND
EF01 DB77   XLOP IN A,(77)   ;GET USART STATUS
EF03 CB47        BIT 0,A     ;IS USART BUSY ?
EF05 28FA        JR Z,XLOP   ;IF YES, LOOP AND WAIT
EF07 F1          POP AF      ;GET CHR$ TO BE SEND TO REMOTE
EF08 D373        OUT (73),A  ;SEND CHR$ TO REMOTE
EF0A AF     RET: XOR A       ;CLEAR REGISTER A
EF0B 32085C      LD (lask),A ;LOAD KEY PRESSED WITH 00
EF0E 06FF        LD B,FF     ;LOAD REGISTER B=FF
EF10 10FE   DLP1 DJNZ,DLP1   ;DELAY LOOP 255 CYCLES
EF12 C339EE      JP RLOP     ;NOW RETURN TO START
EF15 D620   AGAN SUB 20      ;SUBTRACT 20H AGAIN FROM CHR$
EF17 C9          RET         ;RETURN
EF18 3A01EE OPEN LD A,(BOPN) ;LOAD REG. "A" BUFFER STATUS
EF1B FE00        CP 00       ;BUFFER CLOSED ??
EF1D 2806        JR Z,OPN1   ;IF NOT, GO OPEN BUFFER
EF1F 3E00        LD A,00H    ;LOAD REG "A" 00 TO CLOSE
EF21 3201EE      LD (BOPN),A ;CLOSE BUFFER
EF24 C9          RET         ;RETURN TO CONV
EF25 3EFF   OPN1 LD A,FF     ;LOAD REG "A" 255=FFH
EF27 3201EE      LD (BOPN),A ;OPEN BUFFER
EF2A AF          XOR A       ;CLEAR REG "A"
EF2B C9          RET         ;DONE, RETURN TO CONV
```

A bit crude in places, but it works, and if it works, don't fix it. I probably could have done a few things different, but when I wrote this program, I wasn't as proficient writing code. Guess we all have to learn, and one way to learn, is, to do it! Start with something simple, and have a book handy which explains the mnemonics. An assembler is a must, most full screen editors & assemblers will do fine, but are a bit complex at times, a real good assembler / disassembler is HOT Z, which one could use to enter the

above code. I bought HOT Z second hand from someone who had bought a better computer, poor guy! And I love it. To bad HOT Z is not available for other computers.

Reading through the code, you may have noticed, that when pressing Caps Shift & Symbol Shift together, and then pressing the "A" key, this will get you back to basic, while pressing the "B" key after CS/SS, will reset and clear the buffer, pressing the "E" key after CS/SS will togle the buffer either on or off, depending on in which state the buffer is. This will permit you to open the buffer from within the terminal program. If the buffer is togled, no reset or erase is performed, this will let you save some incoming, close the buffer, wait for some other stuffs, and reopen the buffer again to save some more without loosing text you had already saved.

I just typed this feature in right now without the aid of an assembler, all I can say is, I hope it works!! Use the clear buffer function to clear the buffer if you wish to do so.

Now that I took all the challenge out of adding this, I will give you another! There is no indicator that the buffer is open or closed! You could figure out to put an asterisk somewhere on the screen when the buffer is open, but you would slow the program down if you put it into the present read routine. One way to get out of the slow screen routine in ROM is to write your own routine, which, since you wont need all the checks the ROM routine normally makes, especially after the srceen has filled, will run quite a bit faster. This is a bit of a challenge for a novice to code, maybe you find such a routine somewhere, and are able to incorporate it into the above code.

Here now a few lines of basic, which should go along with the code.

```
10 CLEAR 60927: PAPER 0: BORDER 0:
   INK 7: CLS
20 LOAD/"TERMINAL"CODE
30 INPUT "BAUD RATE * 300/1200 >";B:
   IF B=300 THEN POKE 60929,79
40 IF B=1200 THEN POKE 60928,78
50 INPUT "BUFFER OPEN (Y/N) ";A$: IF
   A$="Y" OR A$="y" THEN POKE 60929,
   255: GO TO 70
60 POKE 60929,0
70 RANDOMIZE USR 60984: RANDOMIZE
   USR 60984
80 PRINT "DO YOU WISH TO VIEW BUFFER
   (Y/N)": PAUSE 0: IF INKEY$="N" OR
   INKEY$="n" THEN STOP
90 PRINT ''"HARDCOPY (Y/N)": PAUSE 0
   : IF INKEY$="N" OR INKEY$="n" THE
   N LET A=2: GO TO 110
100 LET A=3
110 FOR X=28150 TO 60918
120 IF PEEK X=0 THEN STOP
130 PRINT #A;CHR$ PEEK X;
140 NEXT X
```

The code has one ROM call, you would have to change the call at location EEC0 if you are planing to use this program with the 2068 in the TIMEX mode, to 03F3. The above program should work with OS64, to give you 64 columns, but you may have to decrease the buffer size !? This can be accomplished, changing the code at EE11 & EE2B from 8000 to whatever number will work.

Have fun! Next month I will be in Europe, I hope to have a column ready for the May issue of SMUG BYTES before I leave (something about the QL & TURBO). If not, you will find it in the June issue.

R.A.H.

Ps: The above program is set up for 8 bit, 1 stop bit, parity = none.

UNDERSTANDING POWER LINE DISTURBANCES

This is an excerpt from a Wisconsin Electric Power Company pamphlet and given to me by SYSTECH ELECTRONICS.

Severe storms, lightning, equipment failures, and even small animals can cause power line disturbances. Equipment operation or defective equipment within your facility, or a neighboring facility, can also cause power irregularities. The following are some types of disturbances:

Sags and Surges

Sags are short-term voltage fluctuations BELOW normal voltage levels and the most common form of electrical power disturbance. They can result from momentary overloading of electrical supply circuits, ground faults, utility switching or starting big loads like motors or arc welders.

Surges are short-term voltage fluctuations ABOVE normal voltage levels. Surges are less common than sags but are often more damaging to electronic equipment. They are seen more frequently in facilities with rapidly varying electrical loads, often caused by the turning on/off of electric motors. Air conditioners, electric power tools, ignitors or ignition systems, electrostatic copy machines, arc welders and elevators are most likely to create surges.

Transients (Spikes/Impulses)

Transients are short duration, sharp impulses that cause a sudden change in the normal voltage. Although much briefer in duration than a sag or surge, a transient voltage may exceed normal level by 5 or 10 times.

Transients can be caused by a lightning strike several miles away, transmitted through power lines, show up anywhere along the line, & affect many utility customers. Transients also are caused by normal operation of electrical equipment like turning on/off of electrical motors. Transient voltages can alter or erase data stored in computer memories, produce computer output errors, cause equipment damage or reduce equipment service life.

Electrical Noise

Interference, called "noise," can be created by any electrical equipment. However defective or equipment thats not installed properly is usually the main source of noise. This equipment may include: xmitters, fluorescent lights, computers and even simple devices such as light & wall sockets, plugs & loose connections. Thyristor based devices such as inverters, variable frequency drives & lighting dimmers also are sources of noise.

What Can You Do?

UPS – Uninterruptible Power Supplies. These will eliminates virtually all types of power line disturbances.

Voltage Regulating Transformers – They are made up of transformers, inductors and capacitors that reconstruct the desired AC output.

Transient("Spike") Suppressors – They greatly reduce high-voltage impulses & can cope with most transients, but they allow sags & surges to pass. Each suppressor's actual capability will depend on design, quality & where located in the circuit.

Filters – Power line filters are a widely-used method for reducing high frequency electrical noise. There are various types, each designed to handle noise at different ranges and frequencies.

Voltage Regulators – They maintain voltage output within narrow limits despite fluctuations (sags & surges) in the power supply.

Isolation Transformers – Designed to prevent electrical noise on a power line. They can prevent common mode noise (line to ground) from being passed, but can't prevent all line to line noise.

Power Conditioners – These types of power line enhancers combine two or more types of protection into one device. Their cost is usually less than the combination of individual power enhancement devices.

Review of the QL IBM Emulator

Neil has purchased the Chocolate version of the QL IBM emulator and I have been trying it out as Neil's drives have been acting up. The main idea in trying the emulator is to be able to use data from the IBM pc at work on the QL.

To start with you load a QL program called "The Solution". This is the program that converts the QL into an 8088 emulator. The disk contains a boot program that brings the Solution up. With the emulator running you press a key and a screen appears asking what disk you want to load the MS-DOS from. From then on you are emulating the IBM system. All of the responses and commands are MS-DOS or follow the program you are running.

I have had Lotus 1-2-3 running and it works fine. I am trying to bring up Wordperfect but am having a small problem. The only thing that I can see is a real hardware problem is the speed. I am a touch typist and over type the screen with ease. The data continues but I can't see if I made a mistake in typing. Watch yourself if purchasing any programs for the IBM emulator. They can't have any speed, monitor or size restrictions above these: Speed can't be required to be faster than 2 mhz. Most programs do not have this requirement but watch it. The size can't be over the amount of memory The Solution says you have. I have a Trump Card expansion board with 856K and The Solution comes up with 667k. The major check is your monitor. Some require RGB or CGA, but these are ok if you have a RGB cable for plugging into a monitor or a real RGB monitor. You can't run EGA or VGA programs as they require a special board which we don't have. (YET?). If you wish to run games go ahead but you will really rack up the scores as all run very slow.

The Chocolate version contains a nice utility to transfer programs from/to IBM/QL. I will have a review of this utility next month. You can not read a QL disk when in emulation mode so this utility will be important when moving files between the computers. I have an RGB monitor and two 3 1/2" disk drives but I have tried it on a black and white monitor and had no problems providing I used monitor mode. The only problem in TV mode is you will lose the bottom of your TV screen. I have used my DS DD 5 1/4" disk drives and have had no problems reading, writing or formating in IBM emulation mode.

When using the 3 1/2" drives I have had problems. Sometimes when copying disk to disk an error message appears telling me I made an illegal disk change even though I did nothing. At other times I get a read error when the copy is doing a verify. A retry on the error message will allow the copy to continue with no problems.

The Chocolate version comes with a few utilities that allow you to pass files back and forth. The Solution is still running in QL mode while you are emulating the IBM system. This means you can work on it with the QL and then pass it to the emulator, save it, and take it to work.

The documentation for the Solution is there but is marginal. There is a QL file called README that contains more documentation and should be loaded into QUILL and printed. The MS-DOS documentation is really more like a reference manual, like the QL manual, than an instruction or training book.

I would suggest to contact someone with some MS-DOS experience to help you to learn how to use MS-DOS. It is a real change to the Sinclair way of doing things. It is similar to CPM, for all you CPM users out there.

We had some problems using a printer but we resoved it by using REDIRECT. What this does is allow the user to send the data to a new device instead of the default device. This is done as follows: "DIR a:" this will give a directory of your disk file on the screen. "DIR>PRN a:" this will now redirect the directory to PRN, the printer, instead of the screen.

PRESIDENTS MESSAGE

Well my main thrust has been getting ready for the CAPSFEST but I have gotten some time in on the IBM emulator. Not as much as I would like but... Bill and I have been playing with it and have learned much about MS-DOS. We are having problems with printing anything with MS-DOS but expect to have that problem licked.

Made it to the Madison Swapfest and picked up some (128k) EPROMs. Also got a IBM program for Desk Top Publishing.

Upcomming fests:
CapitalFest - New Carrolton MD. Friday May 5 to Sunday, April 7. $10 at the door.
SWAPFEST Cedarburg, Circle B Recreation Center. Hy 60 and County I. Saturday May 6. 8am to 1pm. $3 at the door. See you at the meeting.

SPELLCHECKER PROBLEM

Have any of you out there used Quill with Spellchecker and Taskmaster? I have and when trying to save an updated dictionary I lose data. I am not sure if it is a problem with TM or something else. I will let you know about what I find out.

Lemke Software

I am sorry to report that Lemke Software Development is no longer in business. SMUG just received a letter from them informing us that because of lack of interest by the TS-2068 community they are closing down and putting Pixel Print Plus and Pixel Print Professional in Public Domain. I am sorry to see them go. They have been a good member in our TS family and a very professional company. I hope Stan will still do programming for us and stay with Sinclair.

Well we had a good meeting. We talked about getting ready for the fest in Washington DC and what we should look for. It apears we will only have four members attending. It is a 750 mile drive (15 hours non-stop) but can be done in relative ease. I have been reading that this may be the last one but I hope not.

For all you who will miss the Capfest please note the Swapfest in Cedarburg will be on that same weekend. If any members are going the members going to the Capfest may have a wish list. We made one for the Madison swapfest at the March meeting and it worked.

We had the IBM emulation demo and if I say so myself. We showed the Lotus 1-2-3 program and the speed it worked at. Along with the IBM demo Lloyd demo'ed his TS2068 real time clock. The clock runs while you are doing other things. This means you can have the clock running for interegation by a game program or when saving to disk or tape they can be time stamped.

Hope to see you at the next meeting. Bring you equipment so we can see what you are doing. We are interested in YOUR computer doings. If you are using a spread sheet show us how and why. Some of us, myself included would like to see how it is used.

Pick up your copy of the By-Laws at the meeting. I will have a limited supply.

For those of you out there with a busted TS2068 you can contact Dan Elliott of Promise Land Electronics for repairs. His phone number is 417-469-4571. His address is Route 1, Box 117, Cabool, MO 65689.

For those of you interested in the Digitizer please note: We will have one or two at the CapsFest as a demo and will take orders there. To all of you who have written for information the letters are going out this month.

The Sinclair Milwaukee Users Group
(SMUG)

s a not-for-profit group devoted to erving the interests of those who wn, use, educate and/or interested in he Timex/Sinclair family of omputers.

ditor and contact person: Bill eberlein (414) 527-2191

MUG maintains a gratis exchange of ewsletters with approximately 30 sers Groups accross the U.S. Clubs ot sending a newsletter, to us, for ix months are automatically taken off he list.

Newsletter subscription is available for only $10 per year to non members or free with a club membership. A club membership is $20 per year for a family.

Advertising rates are $10 for 1/2 page for six months. The add copy may be changed each month but you must supply the copy.

SmugToons

Better not have spent too much at the Swapfest.

FIRST CLASS MAIL

MUG Bytes
052 N. 91st Street
ilwaukee WI 53225

he next meeting of SMUG will be held on:

ednesday, May 3, 1989
  6pm Set up
  6:30 Members Demo's
  7:30 Business Meeting
  8:30 Set up Wish List for
     purchase at the Fest.
10:30 ?

Location:
Equitable Savings and Loan,
145th and Capitol,
Milwaukee Wisconsin